

## Description of Proposed Modification

Denali 20020, LLC requests authority to modify their existing Call sign E990069 in Brewster, Washington to operate proposed S-band and UHF transmit frequencies and receive in X-band. The existing 7.6 meter earth station will transmit at S-band frequency ranges (2055.345 to 2056.655 MHz) receive X-band frequency ranges (8099.585 to 8166.415 MHz and 8166.585 to 8233.415 MHz) and the proposed Yagi antenna configuration will operate on UHF frequency ranges transmit (449.970 to 450.03 MHz) and receive (401.270 to 401.33 MHz). The proposed modifications will involve communications with the Flock 1-1 thru 1-28 constellation of non-geostationary orbit (NGSO) Earth Exploration Satellite Service (EESS) imaging satellites operated by Planet Labs.

This proposed modification is a follow-up to the recently granted STA file number SES-STA-20140224-00097 and thru this modification will assist Planet Labs in the testing and operations of their satellite system. A similar grant was made to Planet Labs for the UHF portion of the band under Call Sign E140040, SES-LIC-20140411-00282. The UHF portion of the proposed Denali 20020, LLC modification will operate under identical parameters.

Denali 20020, LLC understands that UHF-band and X-band operations will be on a non-interference and non-protected basis only.

The following frequency information granted for STA: SES-STA-20140224-00097 is once again requested for this proposed modification:

**Table 1 Frequency Characteristics**

Frequency Bands	T/R Mode	Emission Designator	Max EIRP (dBW)	Max EIRP density (dBW/4kHz)	Modulation and services
<u>Antenna 1 ("S/X-band")</u>					
8099.585 to 8166.415 MHz	R	66M8G1D	N/A	N/A	Digital: Payload (Data), TT&C. QPSK and 8-PSK
8166.585 to 8233.415 MHz	R	66M8G1D	N/A	N/A	Digital: Payload (Data), TT&C. QPSK and 8-PSK
2055.345 to 2056.655 MHz	T	1M31F1D	49.01	23.86	Digital: TT&C. MSK
<u>Antenna 2 ("UHF")</u>					
401.270 to 401.33 MHz	R	60K0F1D	N/A	N/A	Digital: TT&C. GFSK
449.970 to 450.03 MHz	T	60K0F1D	25.48	13.72	Digital: TT&C. GFSK

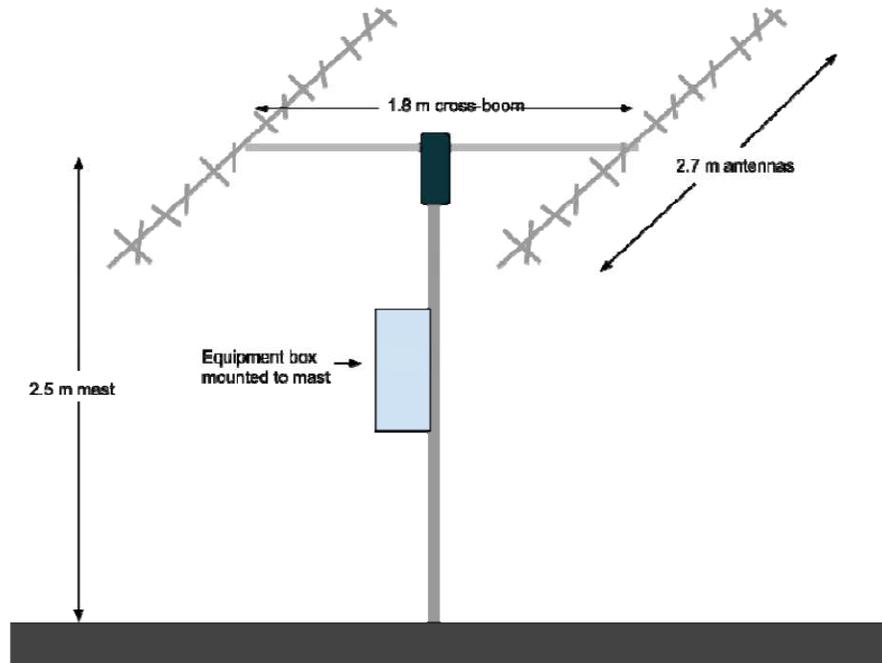
Frequency Coordination was completed for the transmit band of 2055.345 to 2056.655 MHz and is attached as a Coordination Exhibit to this filing.

**Table 2 UHF Antenna Characteristics (Antenna 2)**

Antenna	Manufacturer & Model	# of elements	Antenna Length (m)	Peak Gain (dBi)	3dB Beamwidth (deg)	Polarization
Uplink Yagi	M2 Inc. 450CP34	17	2.7	16.5	30	RHCP
Downlink Yagi	M2 Inc. 400CP30	15	2.7	16.5	30	RHCP

**Table 3 UHF Rotator and Mount Characteristics (Antenna 2)**

Manufacturer & Model	Type	Mast Height (m)
Yaesu G5500	Az/EI	2.5



**Figure 1 UHF earth station diagram**